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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

APPLICABILITY OF RCRA REGULATIONS TO A PROPOSED FUMING/ GASIFICATION UNIT

November 15, 1994

MEMORANDUM

SUBJECT: Exide Corporation's Proposed Fuming/Gasification Unit

FROM: Michael, Shapiro, Director
Office of Solid Waste (5301)

TO: Marcia Parisi Vickers
Associate Division Director
Office of RCRA Programs, Region III (3HW03)

This is in response to your September 29, 1993, memo requesting a Headquarters' determination as to whether the RCRA regulations apply to a fuming/gasification unit that Exide Corporation proposes to build adjacent to its existing lead smelting facility near Reading, Pennsylvania. In particular, you ask if the device would be subject to RCRA regulations, and, if so, would it be classified as an incinerator, industrial furnace, or miscellaneous treatment unit (i.e., Subpart X unit). Further, you asked, if the device is considered to be a Subpart X unit, how would the permitting priorities established under the Combustion Strategy relate to the Exide facility? The remainder of this memo provides some basic information that needs to be considered in making a decision and then provides our response to your questions.

Description of the Process. As we understand, the fuming/gasification device would use a plasma arc to process lead-contaminated soil and soil mixed with spent battery casings. Lead and organic compounds would be vaporized in the device and exhausted to the afterburner section of an existing reverberatory furnace. The reverberatory furnace and its afterburner is used for secondary lead smelting and would qualify for the metals

recovery exemption under the Boiler and Industrial Furnace (BIF) rule. The afterburner would serve to destroy the organics in the exhaust from the plasma arc device and the lead would be captured (i.e., by condensation onto particulates and gas cleaning for particulate matter) and returned as feed to the reverberatory furnace for processing into salable product. The inorganic soil fractions that do not vaporize would be tapped off as slag.

Classification of Devices vs Process Trains. Given that the off-gas from the plasma arc device would be vented to an existing secondary lead smelter, previous guidance would require that we evaluate the classification of the new device -- that is, the fuming/gasification unit -- for determinations such as interim status eligibility, when applicable. For determining what regulatory standards and permit conditions should be applied, we would look at the process train in which the device would be incorporated (i.e., the plasma arc, secondary lead smelter, and afterburner). This guidance describes how the regulations apply to combustion devices at a facility where: (1) more than one device type (e.g., incinerator, industrial furnace, Subpart X unit) is connected in a process train: (2) the emissions from the connected devices emanate from a single stack; and (3) each device is separately burning or processing hazardous waste. See my July 29, 1994, memorandum to Allyn Davis (copy attached).

As discussed in that memo, a case-by-case determination needs to be made to identify the standards, and permit conditions that should apply to the process train in its entirety. For purposes of making interim status determinations, the classification of the individual device must be determined separately. Since there is no issue with respect to the eligibility of the new device to qualify for interim status, that evaluation need not be made and is not discussed further in this memo.

Evaluation of the Process Train. The process train would be comprised of the existing reverberatory furnace with its afterburner and the new plasma arc device that is also connected to the afterburner. The question is whether the new plasma arc device would affect the regulatory standards and permit conditions applicable to the process train. In this particular case, we believe the first step is to look at how we would classify the plasma arc/afterburner portion of the process train if it were a separate unit. If it would not be classified as an

industrial furnace, we then need to determine what regulations are applicable to a process train comprised of an industrial furnace and some other device (i.e., the plasma arc/afterburner).

Given that the plasma arc device would be vented to an afterburner that uses controlled flame combustion, that portion of the process train would meet the definition of an incinerator, industrial furnace, or theoretically, a boiler, as those devices are defined in 260.10. Thus, this part of the process train would not be classified or regulated under Subpart X, Part 264, if it were a separate unit. Further, this portion of the process train would not be classified as a boiler because energy is not recovered and exported. Consequently, this portion of the process train would be classified as either an incinerator or industrial furnace depending on how it would be operated.

We have previously determined that a retorter is a type of pyrometallurgical device that meets the definition of smelting, melting, or refining furnace. See my December 17, 1993, memorandum to Joseph Franzmathes (copy attached). In the metallurgical industry, a retorter is a furnace consisting of a fire chamber in which metals are recovered by vaporization and subsequent condensation. The plasma arc/afterburner portion of the process train would meet the definition of a retorter if: (1) wastes or materials fed into the device contained economically recoverable levels of lead (see 56 FR 7143 (Feb. 21, 1991)); (2) Exide is in the business of producing lead for public sale, whether to an ultimate user or for further reprocessing or manufacture (see generally, 260.10 (definition of industrial furnace); see also EPA Region VI, Statement of Basis for Denial of Permit Application by Marine Shale Processors, Inc., Sept. 15, 1994, p. 6 (devices on enumerated list of industrial furnaces must still be operating as an integral component of a manufacturing process to be an industrial furnace)), and (3) significant levels of lead are recovered. If any of these criteria are not met, this portion of the process train would meet the definition of incinerator.

If it is determined that the plasma arc/afterburner portion of the process train would be an industrial furnace and if it were a separate unit, then the entire process train (i.e., including the secondary lead smelter) would be regulated as an industrial furnace. The emission standards and exemptions for industrial furnaces would apply. If the plasma arc/afterburner

portion of the process train is determined to meet the definition of an incinerator, however, then the evaluation of what regulations would apply is more complex.

Would the Process Train Be Subject to RCRA Regulation? If the plasma arc/afterburner portion of the process train meets the above criteria, then the entire process train would be classified as a smelting, melting, or refining industrial furnace. In this case, even though 260.10 defines a plasma arc incinerator as "any enclosed device using a high intensity electrical discharge or arc as a source of heat followed by an afterburner using controlled flame combustion and which is not listed as an industrial furnace," the plasma arc/afterburner portion of the process train would meet the definition of an industrial furnace. The process train would be conditionally exempt from the Boiler and Industrial Furnace (BIF) rule if it met the exemption criteria in 266.100(c) pertaining to levels of recoverable metals, heating value, and concentration of toxic organic compounds in the hazardous waste feed. Such exempt metals recovery facilities are not subject to RCRA permit requirements for combustion air emissions.

If the plasma arc/afterburner portion of the process train does not meet the above criteria, the entire process train would be subject to the incinerator standards of Subpart O, Part 264. This is because the devices (e.g., reverberatory furnace and plasma arc device) share a common afterburner and stack and the plasma arc device is burning or processing hazardous waste. Given that the reverberatory furnace portion of the process train is conditionally exempt from the BIF rule, the incinerator standards would be the only applicable standards.

Permitting Priority for the Device. The permitting priorities of the draft Waste Minimization and Combustion Strategy, issued in May 1993, relate to Regional and State efforts to work on permit applications submitted by RCRA facilities that combust hazardous industrial process wastes. To the extent that a combustion facility handles only remediation wastes (under either RCRA or Superfund), the priorities under the draft Strategy are not applicable. In addition, in a memorandum of May 9, 1994, Assistant Administrator Elliott Laws clarified that the Agency's shift of RCRA permit priorities did not mean that incineration should not be considered in assessing Superfund remedies. For further information on Superfund issues, please

contact John Smith, Chief, Design and Construction Management Branch, Hazardous Site Control Division, at (703) 603-8830.

I hope that this information will be helpful. If your staff have questions or would like to further discuss the issues, they may contact Mr. H. Scott Rauenzahn at 703-308-8477.

Attachments (2)
cc: M. Straus
S. Silverman
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